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Theodoor Slaghek

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EXAMINER

CALANDRA, ANTHONY J

ART UNIT

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1791

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--|---------------------------------------|--|
| Office Action Summary | Application No. 10/589,868 | Applicant(s) SLAGHEK ET AL. | |
| | Examiner ANTHONY J. CALANDRA | Art Unit 1791 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/20/08; 1/6/09</u> . | 6) <input type="checkbox"/> Other: _____. |

Detailed Office Action

1. The communication dated 11/20/2008 has been entered and fully considered.
2. Claims 1-14 are currently pending.

Claim Interpretation

3. Applicant has amended the claims to include the term 'bleaching'. The term 'bleaching' is generically construed as a process that increases brightness/whiteness. In the pulp and paper art 'bleaching' is an oxidative process which increases whiteness/brightness. Brightening is a reductive process which increases whiteness/brightness. As the applicant only discusses oxidative compounds in the specification [pg. 2 lines 20-30] the examiner has interpreted the term 'bleaching' of the instant claims as only an oxidative process and not a reductive process.

Response to Arguments

4. Applicant's arguments filed 11/20/2008 are persuasive in part. Additionally applicant's amendments have been found persuasive in part.

Applicant states that the claims are amended to include an oxidative treatment which is supported by disclosure. Applicant argues that SCHROEDER teaches a protein hydrolyzed moiety and not a protein hydrolysate derived from a keratin containing material. Applicant further does not disclose that it is derived by oxidation.

The examiner finds the first argument convincing. The term 'moiety' means part of. The keratin hydrolysate of SCHROEDER is part of another compound. As such it differs from the

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instant claims which claim a protein hydrolysate. A protein hydrolysate is the product of the hydrolysis of protein and is not part of another compound.

The examiner finds the amendment and argument that SCHROEDER does not teach 'oxidation' to produce the keratin hydrolysate convincing. SCHROEDER does not teach how the keratin part of the keratin moiety containing compound is made.

Therefore for the above reasons the rejection based on SCHROEDER has been withdrawn.

Applicant argues the art combination of HUGHES with SCHROOYEN. Applicant argues that HUGHES and SCHROOYEN are not analogous arts as SCHROOYEN does not teach a paper making process.

This argument is not convincing. SCHROOYEN teaches films and coatings. The application of coating is part of the paper making process (see e.g. patent class 162/135). Further, SCHROOYEN specifically states that the keratin may be used as an adhesive or binder for paper "use in binder or adhesive for wood, paper, paperboard or molded fiber [pg. 17 line 4]". Therefore, HUGHES and SCHROOYEN are both part of the paper making arts. Additionally SCHROOYEN teaches protein based binders and HUGHES teaches protein based binders. As such both prior art documents are related by teaching binders. Finally, SCHROOYEN as argued by the applicant teaches coatings. HUGHES as well teaches that collagen protein hydrolyzed binders can be used for coating. Therefore both HUGHES and SCHROOYEN are related by teaching coatings [column 9 lines 23-24; column 24 lines 20-25].

Applicant argues that SCHROOYEN mentions that hydrolysates obtained by hydrogen peroxide are less suited for coating applications. Applicant then argues that SCHROOYEN teaches reduction and not the oxidation of the instant invention.

This argument is not convincing. In the line that the applicant quotes SCHROOYEN is discussing another process, specifically U.S. Patent 3,464,825. SCHROOYEN states that *complete* modification of the keratin is a negative. In contrast SHCROOYEN only teaches partial modification [pg. 7 lines 5-10]. SCHROOYEN does teach a first reducing step as argued by the applicant [column 5 lines 15-20], however later teaches that the keratin is then modified. SCHROOYEN teaches modification by oxidation with peroxides [pg. 9 lines 6-8]. Therefore while SHCROOYEN does teach an additional step as compared to the instant claim, the instant claim is written using the 'comprising' language. As such the instant claims do not preclude a reduction stage.

Applicant argues that it would have not been obvious to a person of ordinary skill in the art to substitute the keratin protein hydrolysate of SCHROOYEN or the collagen protein of HUGHES. Applicant states that the substitution is based off hindsight reasoning and that there would be no expectation of a successful result.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so

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long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The second question is to whether a person would expect success. Both SCHROOYEN and SCHROEDER teach similar compounds, hydrolysates of proteins. The use of the compounds is similar, as both are used as binders. As the binder of SCHROOYEN is successful for "use in binder or adhesive for wood, paper, paperboard or molded fiber [pg. 17 line 4]" a person of ordinary skill in the art would expect it to be useful as a binder in the wet end of paper making. Further, the binder of SCHROOYEN confers additional advantages that would motivate a person of ordinary skill in the art to use a keratin hydrolysate binder. SCHROOYEN states that the binder acts as both an antimicrobial and as an antioxidant [pg. 16 lines 28-30]. Antibacterial properties are important for preventing the formation of slime on a paper machine. Antioxidants compounds are known to prevent yellowing in paper. As such the examiner has given both a KSR rational and the stronger TSM rational.

Applicant argues that HUGHES teaches enzymatic degradation of protein and not oxidative degradation of the protein collage.

The collagen of HUGHES is substituted with the oxidative treated keratin of SCHROOYEN. Therefore this point is moot.

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Applicant argues that the instant invention uses oxidation to change the charge on SH groups which allow the keratin to dissolve better which is a fundamental difference as compared to the applied prior art.

SCHROOYEN in fact does teach oxidation and states that the oxidation places a negative charge on the keratin and states that the negative charge enhances the dispensability of the keratin [pg. 9 lines 6, 12-13].

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 10-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12, 13, and 15-17 of copending Application No. 10/589,869. Although the conflicting claims are not identical, they are not patentably distinct from each other because both disclose keratin containing pulp and paper products. While the copending application does not state how much keratin containing material is inside

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the paper and pulp products, it would have been obvious to optimize the amount of additive added to the paper material.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant requests that double patenting rejections be held in abeyance.

Claim Rejections - 35 USC § 101 and 112

6. In light of amendment the rejection to claims 1-8 have been withdrawn. However, the claim could be more clearly written as “A process comprising contacting a keratin-containing material with a solution which comprises a bleaching agent to produce a protein hydrolysate ~~using the and adding said~~ protein hydrolysate derived from keratin-containing material ~~as an additive in to~~ the wet-end of a papermaking process”.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 5,707,491 HUGHES et al. in view of WO 03/006531 SCHROOYEN et al., hereinafter SCHROOYEN.

As for claims 1, 8 and 9, HUGHES et al. discloses the use of a hydrolyzed collagen material in papermaking to strengthen the paper sheet [abstract]. HUGHES discloses that the collagen is solubilized and added into the paper making slurry which the examiner has interpreted as the wet end [abstract]. HUGHES states that the collagen is from soft animal tissues [column 4 lines 38-55]. HUGHES mixes the solubilized collagen with the paper pulp and then dewater and dries the pulp. HUGHES uses the material as a binder [column 1 lines 10-20]. HUGHES discloses that paper is formed by using virgin fiber, adding in the solubilized collagen

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then forming the pulp slurry (which the examiner has interpreted contains the common step of pressing) and drying the sheet [column 7 lines 1-25].

HUGHES does not disclose the use of keratin proteins for the use of a strengthening binder agent. SCHROOYEN teaches modification by oxidation with peroxides of keratin containing materials [pg. 9 lines 6-8]. SCHROOYEN discloses that the keratins produced were found to be used as binders, antioxidants and antimicrobial agents [pg. 16 lines 15-30]. At the time of the invention it would have been *prima facie* obvious to substitute the natural collagen protein binder of HUGHES for the natural keratin protein of SCHROOYEN. It is *prima facie* obvious to substitute one known component for another known component with the expectation of predictable results. At the time of the invention a person of ordinary skill would expect that the natural protein collagen binder could be successfully substituted for a natural protein keratin binder. A person of ordinary skill in the art would be further motivated to do use the keratin agent for its antioxidant and antibacterial properties [pg. 16 lines 28-30]. Antibacterial properties are important for preventing the formation of slime on a paper machine. Antioxidants compounds are known to prevent yellowing in paper.

As for claim 2-7, SCHROOYEN discloses that keratin protein hydrolysate can be made from hair or feathers [pg. 4 lines 25-28]. SCHROOYEN further discloses using chicken feathers which are livestock [pg. 4 lines 29-35]. SCHROOYEN does not disclose pig hair but at the time of the invention it would have been obvious to try the hair of a pig absence evidence of unexpected results. There are a limited number of hair producing mammals that are farmed on a large scale to supply enough keratin containing material to process. It is *prima facie* obvious to

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try an element from a finite and limited number of predictable solutions. A person of ordinary skill in the art would expect any keratin containing mammalian hair to work.

As for claims 10-14, HUGHES discloses adding 0.1 to 2% of soluble collagen which overlaps with the instant claimed ranges [column 5 lines 15-20]. The pulp and paper product formed by HUGHES with the substituted keratin of SCHROOYEN would be substantially similar to the instant claimed products.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. CALANDRA whose telephone number is (571) 270-5124. The examiner can normally be reached on Monday through Thursday, 7:30 AM-5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AJC/

/Eric Hug/
Primary Examiner, Art Unit 1791